

## CLAIMS

We claim:

1. A device for cooling a fuel cell that adjusts a temperature of the fuel cell to a target set temperature by supplying a coolant, wherein

5 a parameter related to a temperature of the coolant can be controlled so as to maintain an electric conductivity at the target set temperature within a target electric conductivity range based on the correlation between the parameter related to the coolant temperature and the electric conductivity of the coolant.

10 2. The device for cooling a fuel cell according to claim 1, wherein the parameter related to the temperature of the coolant is at least one element selected from the group including the temperature of the coolant, a cooling degree of the coolant, a required output of the fuel cell, an operation state of the fuel cell, and an external air temperature.

15 3. The device for cooling a fuel cell according to claim 1 or 2, wherein the temperature of the coolant is controlled by changing at least one of the cooling degree of the coolant and the operation state of the fuel cell.

20 4. The device for cooling a fuel cell according to any one of claims 1 to 3, further comprising electric conductivity decreasing means for decreasing the electric conductivity of the coolant, wherein

the parameter related to the temperature of the coolant is controlled based on the decrease quantity of the electric conductivity with the electric  
25 conductivity decreasing means.

5. The device for cooling a fuel cell according to claim 1, comprising:  
electric conductivity measuring means for measuring the electric  
conductivity of the coolant;

temperature measuring means for measuring the temperature of the  
5 coolant;

means for estimating the electric conductivity at the target set  
temperature based on the electric conductivity of the coolant, the temperature of the  
coolant, and the correlation of the temperature and electric conductivity of the  
coolant; and

10 means for decreasing the target set temperature when the electric  
conductivity at the target set temperature exceeds the target electric conductivity  
range.

6. The device for cooling a fuel cell according to claim 5, further  
15 comprising means for increasing the target set temperature within a range in which  
the electric conductivity at the target set temperature does not exceed the target  
electric conductivity range.

7. A method for cooling a fuel cell by which a temperature of the fuel cell is  
20 adjusted to a target set temperature by supplying a coolant, the method comprising  
the steps of:

measuring a electric conductivity of the coolant;

measuring a temperature of the coolant;

25 estimating the electric conductivity at the target set temperature based  
on the electric conductivity of the coolant, the temperature of the coolant, and a  
correlation of the temperature and electric conductivity of the coolant; and

decreasing the target set temperature when the electric conductivity at the target set temperature exceeds the target electric conductivity range.

8. The method for cooling a fuel cell according to claim 7, further
- 5 comprising a step of increasing the target set temperature within a range in which the electric conductivity at the target set temperature does not exceed the target electric conductivity range.